

RI/FS DOCUMENT / MEETING SUMMARY
Updated through January 24, 2017
Leviathan Mine Site
Alpine County, California

Date	Date Submitted by Atlantic Richfield	Date Submitted by EPA	EPA Requested Due Date	Atlantic Richfield Estimated Timeframe for Submittal	Work Plan / Document	Amendment / Addendum / Revision No.	Author	Recipient	Item	Atlantic Richfield Status	US EPA Status	US EPA Comment	Atlantic Richfield Comment
08/14/15	08/14/14		08/10/15		On-Property / Off-Property / Reference	NA	Atlantic Richfield	US EPA	Response to US EPA and LRWQCB Comments on the Revised Data Quality Objectives for the On-Property and Reference Study Areas and Updated Cross-Reference Matrix Table	Submitted			
07/10/15					On-Property / Off-Property / Reference	NA	US EPA	Atlantic Richfield	EPA Comments on Revised Data Quality Objectives for the On-Property and Reference Study Areas and Updated Cross-Reference Matrix Table	Received			Also requested response to US EPA's 12/26/12 and 11/14/14 letters.
02/28/15					On-Property / Off-Property / Reference	NA	Atlantic Richfield	US EPA	Revised Data Quality Objectives for the On-Property and Reference Area Study Areas and Updated Cross-Reference Matrix Table	Submitted			Response to US EPA 11/14/2014 comments
02/28/15					Reference	NA	Atlantic Richfield	US EPA	Revised Reference Area DQOs	Submitted			Submitted with Draft Final Reference Area FRI Work Plan
11/21/16		11/21/16			Program	QAPP	US EPA	Atlantic Richfield	EPA Comments on Atlantic Richfield Company (ARC) Final Revised RI/FS Quality Assurance Project Plan (QAPP), Revision 1 for the Leviathan Mine Site in Alpine County, California; dated June 17, 2016, Updated Project Database dated June 30, 2016; and the DQOs response from ARC dated August 14, 2015.	Received; RTC and revised document in progress			EPA conditionally approved the QAPP dated June 17, 2016; provided EPA comments are addressed. A few of the comments remain unaddressed as outlined above. EPA's conditional approval remains in place. Within 60 days, or by January 21, 2017, EPA directs ARC to provide a line-by-line response to these comments and submit a revised Final Updated Quality Assurance Project Plan (QAPP) and Data Management Plan that incorporates the Database, the DQOs and the Conceptual Site Model incorporating these changes.
11/01/16	11/01/16				Program	QAPP	Atlantic Richfield	US EPA	Response to EPA comments on PE Samples	Submitted			Email; discussed with US. EPA via telephone on 11/8/16
10/24/16		10/24/16			Program	QAPP	US EPA	Atlantic Richfield	EPA comments on PE Samples	Received			Email
06/17/16	06/17/16		05/27/16		Program	QAPP	Atlantic Richfield	US EPA	Remedial Investigation/Feasibility Study Quality Assurance Project Plan, Revision No. 1 [Final]	Submitted	US EPA comments delivered 11/21/16		Includes line-by-line response to 04/28/16 comments. Includes complete set of DQOs as of submittal date.
04/28/16		04/28/16			Program	QAPP	US EPA	Atlantic Richfield	EPA Comments on Atlantic Richfield RI/FS Quality Assurance Project Plan (QAPP), Revision No. 1 for the Leviathan Mine Site in Alpine County, California; dated March 9, 2016	Received			Conditional approval of RI/FS Quality Assurance Project Plan, Revision No. 1. Within 30 days, requests line by line RTC and revised Final Updated Quality Assurance Project Plan and Data Management Plan along with updated schedule that incorporates the data usability process US EPA has outlined.
03/09/16	03/09/16		03/09/16		Program	QAPP	Atlantic Richfield	US EPA	RI/FS Quality Assurance Project Plan, Revision No. 1	Submitted			Includes line-by-line response to 02/09/16 comments.
02/09/16		02/09/16			Program	QAPP	US EPA	Atlantic Richfield	EPA Comments on Atlantic Richfield RI/FS Quality Assurance Project Plan (QAPP), Revision 1 for the Leviathan Mine Site in Alpine County, California	Received			
02/05/16	02/05/16				Program	QAPP	Atlantic Richfield	US EPA	Draft Annotated Revised QAPP TOC and Crosswalk	Submitted			Email; attached files are dated 01/27/16.
01/14/16		01/14/16			Program	QAPP	US EPA	Atlantic Richfield	EPA initial comments on the QAPP and Data Quality Discussions	Received			Email
12/14/15	12/14/15				Program	QAPP	Atlantic Richfield	US EPA	Quality Assurance Project Plan, Revision 1	Submitted	US EPA preliminary comments delivered 01/14/15		Requested by US EPA in 04/01/15 technical meeting to discuss data usability.
8/24/2016		8/24/2016			On-Property, Off-Property, and Reference	Fish TSAP	Atlantic Richfield	US EPA	Email FW: NED OK WITH THIS?EPA Conditional Approval on the Fish Sampling TSAP	Submitted			Concurs with ARC's proposed sampling (8/23/16 email), but notes that timing of sampling intended to ensure comparable results with previous event in October because fish feeding behaviours change with season.
8/23/2016	8/23/2016				On-Property, Off-Property, and Reference	Fish TSAP	Atlantic Richfield	US EPA	Email RE: EPA Conditional Approval on the Fish Sampling TSAP	Submitted			Responds to US EPA comments on sampling schedule. Response to reporting schedule submitted in a separate letter on 9/9/16.

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	08/12/16		08/12/16			On-Property, Off-Property, and Reference	Fish TSAP	US EPA	Atlantic Richfield	EPA Comments ARC Response to Comments (RTC) of Draft On-Property, Off-Property Area, and Reference Area FRI Work Plans - Task Sampling and Analysis Plan for Fish Investigation (Draft Final), Leviathan Mine Site, Alpine County, California, Leviathan Mine Site, Alpine County, California, Dated June 13, 2016 [sic]	Received				Conditional approval provided comments are addressed and incorporated as described. Indicates work outlined in TSAP should be completed during the 2016 field season. Requests that sampling be conducted in late September. Requests timely notification of anticipated completion of work. Requests written report within 90 days of completion of field work.
	06/13/16	06/13/16		06/13/16		On-Property, Off-Property, and Reference	Fish TSAP	Atlantic Richfield	US EPA	On-Property, Off-Property Area, and Reference Area FRI Work Plans - Task Sampling and Analysis Plan for Fish Investigations [Draft Final]	Submitted	US EPA comments delivered 08/12/16			Before proceeding with specimen collection, Atlantic Richfield Company is requesting (in Appendix D, Section 4.0) that the U.S. EPA provide written confirmation that the work described in this TSAP is exempt from state and federal permit requirements under CERCLA § 121(e) and that no further consultation with the U.S. Fish and Wildlife Service is required under the Endangered Species Act.
	05/13/16		05/13/16			On-Property, Off-Property, and Reference	Fish TSAP	US EPA	Atlantic Richfield	EPA comments on Draft On-Property, Off-Property, and Reference Area Focused Remedial Investigation Work Plans—Task Sampling and Analysis Plan for Fish Investigation, Leviathan Mine Site, Alpine County, California, dated February 5, 2016	Received				Requests line-by-line RTC and revised and updated SAP within 30 days.
	02/05/16	02/05/16		11/13/15 01/29/16	01/29/16 per 11/13/16 extension request; 02/05/16 per 12/27/16 email	On-Property, Off-Property, and Reference	Fish TSAP	Atlantic Richfield	US EPA	On-Property, Off-Property, and Reference Area FRI Work Plans - Task Sampling and Analysis Plan for Fish Surveys and Sampling [Draft]	Submitted	US EPA comments delivered 05/13/16			11/13/16 letter to request extension to 01/29/16; 01/27/16 email to inform need additional week to 02/05/16
	12/08/15		12/08/15			On-Property, Off-Property, and Reference	Fish TSAP	Atlantic Richfield	US EPA	US EPA Response to Request for Schedule Extension for Fish Sampling Work Plan On-Property, Off-Property, and Reference Area Focused Remedial Investigation Work Plans	Received; responded via email on 12/10/15				US EPA indicates not opposed as long as does not impact RI/FS schedule and its RI and Risk Assessment. Atlantic Richfield responded via email on 12/10/15 explaining rationale for timing of field activities and submittal date for work plan. Further discussed during 12/10/15 quarterly technical meeting.
	11/13/15	11/13/15				On-Property, Off-Property, and Reference	Fish TSAP	Atlantic Richfield	US EPA	Request for Schedule Extension for Fish Sampling Work Plan On-Property, Off-Property, and Reference Area Focused Remedial Investigation Work Plans	Submitted	US EPA comments delivered 12/08/15			Requests extension to 1/29/16; need additional time to review and evaluate previous investigation results.
	10/13/15		10/13/15	11/13/15	Requested extension to 01/29/16	On-Property, Off-Property, and Reference	Fish TSAP	US EPA	Atlantic Richfield	Request for Fish Sampling Work Plan On-Property, Off-Property, and Reference Area Focused Remedial Investigation Work Plans	Received				Requested in US EPA's 10/13/15 letter transmitting comments on the Final BHHRA Work Plan.
	09/09/16	09/09/16				On-Property, Off-Property, and Reference	Plant/Soil TSAP	Atlantic Richfield	US EPA	Supplement Plant Data Collection	Submitted				Informed US EPA of additional plant data collection (mass and total/inorganic arsenic for three leafy greens) to be performed in late 2016.
	04/08/16	04/08/16		04/09/16		On-Property, Off-Property, and Reference	Plant/Soil TSAP	Atlantic Richfield	US EPA	On-Property, Off-Property Area, and Reference Area FRI Work Plans – Plant and Habitat-Related Soil Investigations [Final]	Submitted	Pending US EPA review			Submitted with line-by-line response to 03/06/16 comments.
	03/09/16		03/09/16			On-Property, Off-Property, and Reference	Plant/Soil TSAP	US EPA	Atlantic Richfield	EPA comments on the Progress Report and Response to Comments on the Draft Final On-Property, Off-Property and Reference Area Focused Remedial Investigation (FRI) Work Plan – Plant and Habitat-Related Soil Investigations, Leviathan Mine Site, Alpine County, California, dated November 16, 2015	Received				Requests line-by-line RTC and revised and updated SAP by April 9, 2016. Directs works to proceed and be completed within 2016 field sampling season.
	11/16/15	11/16/15		11/16/15		On-Property, Off-Property, and Reference	Plant/Soil TSAP	Atlantic Richfield	US EPA	Progress Report and Response to Comments on the Draft Final On-Property, Off-Property and Reference Area Focused Remedial Investigation Work Plan – Plant and Habitat-Related Soil Investigations	Submitted				
	10/16/15		10/16/15	RTC by 11/16/15		On-Property, Off-Property, and Reference	Plant/Soil TSAP	US EPA	Atlantic Richfield	EPA Comments on the June 19, 2015 Draft Final On-Property, Off-Property and Reference Area FRI Work Plan - Plant and Habitat-Related Soil Investigations	Received				RTC and associated revisions are accepted. Defers to the approved work plan and previous EPA comments and provides additional comment, makes several requests.
	06/19/15	06/19/15				On-Property, Off-Property, and Reference	Plant/Soil TSAP	Atlantic Richfield	US EPA	Draft Final On-Property, Off-Property Area, and Reference Area FRI Work Plans – Plant and Habitat-Related Soil Investigations	Submitted				
	06/02/15					On-Property, Off-Property, and Reference	Plant/Soil TSAP	Atlantic Richfield	US Forest Service	Notification of Plant Collection Activities Within the Humboldt-Toiyabe National Forest	Submitted				
	05/18/15				US EPA requests written response within 30 days or by 6/19/15	On-Property & Off-Property	Plant/Soil TSAP	US EPA	Atlantic Richfield	EPA Comments on two separate submittals: the March 20, 2015 Technical Memorandum, Habitat Surveys, Plant Species, and Study Design for Plant Sampling, and the April 7, 2015 On Property FRI Work Plan and Off Property Area FRI Work Plan Plant and Habitat-Related Soil Investigations	Received				

RI/FS DOCUMENT / MEETING SUMMARY
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	04/07/15					On-Property & Off-Property	Plant/Soil TSAP	Atlantic Richfield	US EPA	On-Property FRI Work Plan and Off-Property Area FRI Work Plan - Plant and Habitat-Related Soil Investigations	Submitted			
	02/08/16		02/08/16			On-Property	Optimization	US EPA	Atlantic Richfield	EPA comments on the Atlantic Richfield Response to US EPA September 11, 2015 Comments on Optimization of Select On-Property Monitoring, dated October 12, 2015	Received			Concurrence
	10/12/15	10/12/15		10/12/15		On-Property	Optimization	Atlantic Richfield	US EPA	Response to U.S. EPA September 11, 2015 Comments on Optimization of Select Monitoring Programs	Submitted			
	09/11/15		09/11/15	RTC by 10/12/15		On-Property	Optimization	US EPA	Atlantic Richfield	EPA comments on the Atlantic Richfield Response to U.S. EPA Comments on Optimization of Select On-Property Monitoring, dated April 24, 2015	Received			
	04/24/15					On-Property	Optimization	Atlantic Richfield	US EPA	Response to U.S. EPA Comments on Optimization of Select On-Property Monitoring Programs	Submitted			
	03/26/15					On-Property	Optimization	US EPA	Atlantic Richfield	EPA comments on Proposed Optimization of Select On-Property Monitoring Programs, letter dated February 4, 2015	Received			
	02/04/15					On-Property	Optimization	Atlantic Richfield	US EPA	Optimization of Select On-Property Monitoring Programs [in 2014]	Submitted			
	10/13/15					On-Property	Drilling	Atlantic Richfield	US EPA	RE: EPA Comments to ARC request for US EPA to reconsider Letter of August 14, 2015 Requesting Continuation of RI/FS Drilling Program in 2015	Received			E-mail response to 10/06/15 letter; concurs that should proceed with both reference boreholes and complete LOC-34 as weather permits and drilling equipment is available
	10/06/15					On-Property	Drilling	Atlantic Richfield	US EPA	Response to US EPA Email Correspondence of September 28, 2015 Regarding Rationale for Proposed 2015 Modifications to RI/FS Drilling Program	Submitted			US EPA responded by e-mail on 10/13/15.
	09/28/15					On-Property	Drilling	US EPA	Atlantic Richfield	EPA Comments to ARC Request for U.S. EPA to Reconsider Letter of August 14, 2015 Requesting Continuation of RI/FS Drilling Program in 2015	Received			E-mail
	09/18/15					On-Property	Drilling	Atlantic Richfield	US EPA	Response to US EPA Letter of August 14, 2015 Regarding Rationale for Proposed 2015 Modifications to RI/FS Drilling Program	Submitted			E-mail
	09/08/15					On-Property	Drilling	US EPA	Atlantic Richfield	EPA response to Atlantic Richfield's 8/28/15 email responding to Response to US EPA comments on Rationale for Proposed 2015 Modifications to RI/FS Drilling Program	Received			E-mail
	08/28/15			08/28/15		On-Property	Drilling	Atlantic Richfield	U.S. EPA	Response to US EPA comments on Rationale for Proposed 2015 Modifications to RI/FS Drilling Program	Submitted			E-mail
	08/14/15					On-Property	Drilling	US EPA	Atlantic Richfield	EPA Comments on Rationale for Proposed Modifications to RI/FS Drilling Program	Received			
	06/26/15					On-Property	Drilling	Atlantic Richfield	US EPA	Rationale for Proposed 2015 Modifications to RI/FS Drilling Program	Submitted			
	06/12/15					On-Property	Drilling	US EPA	Atlantic Richfield	Leviathan Mine - Drilling Program - EPA comments and request for additional information (email)	Received			E-mail
	06/09/15					On-Property	Drilling	Atlantic Richfield	US EPA	Leviathan Mine - Drilling Program (email)	Submitted			Transmits table and figure showing proposed drilling locations for 2015
	12/05/17		12/05/17	None		On-Property	Amendment 12	US EPA	Atlantic Richfield	Email FW: Leviathan Mine - Information Regarding Revegetation Treatability Study Baseline Soil Sampling in ACSA	Received; in progress		Please provide additional details (i.e. map relative to other hydrocarbon findings, and mining era site features) to support how ARC concluded that these observations do not merit follow-up / investigation.	
	06/01/16	06/01/16		05/28/16		On-Property	Amendment 12	Atlantic Richfield	US EPA	On-Property FRI Work Plan Amendment No. 12 - TSAP for Hydrocarbon Investigation (Draft Final)	Submitted	Pending US EPA review		Submitted with line-by-line response to 04/29/16 comments.
	04/29/16		04/29/16			On-Property	Amendment 12	US EPA	Atlantic Richfield	EPA Comments on Atlantic Richfield Draft On-Property Focused Remedial Investigation Work Plan Amendment No. 12 - Task Sampling and Analysis Plan for Hydrocarbon Investigation, Leviathan Mine Site, Alpine County, California, dated February 26, 2016	Received			Requests line-by-line RTC and revised SAP by 05/28/16. Directs works to proceed and be completed within 2016 field sampling season.
	02/26/16	02/26/16		01/30/16		On-Property	Amendment 12	Atlantic Richfield	US EPA	On-Property FRI Work Plan Amendment No. 12 - TSAP for Hydrocarbon Investigation	Submitted			Atlantic Richfield agreed to prepare work plan during a 10/14/14 telephone call.
	06/14/16		06/14/16			On-Property	Amendment 11	US EPA	Atlantic Richfield	Email FW: EPA Approval Amendment No. 11 Acid Ponding Near Leviathan Creek TSAP	Received; need to provide DPZ information			Requests information on the four drive-point piezometers that US EPA requested to be installed along the west bank of Leviathan Creek. No due date provided.
	05/06/16	05/06/16		Not requested		On-Property	Amendment 11	Atlantic Richfield	US EPA	On-Property FRI Work Plan Amendment No. 11 - TSAP for Surface Water/Groundwater Interaction Investigation near Acidic Pond and Leviathan Creek [Final]	Submitted			No revision requested; however, submitted as final to include additional requested drive-point piezometer pairs and make correction regarding installation of data loggers/transducers.

RI/FS DOCUMENT / MEETING SUMMARY
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Alpine County, California

	02/26/16		02/26/16			On-Property	Amendment 11	US EPA	Atlantic Richfield	Draft Final Amendment No. 11 - TSAP for Investigation of Ponding Near Leviathan Creek, Leviathan Mine Site, Alpine County, California, dated February 22, 2015 [sic]	Received			Approves Atlantic Richfield to procede with the work as outlined and directs installation of drive-point piezometers pairs at four more locations.
	02/22/16	02/22/16				On-Property	Amendment 11	Atlantic Richfield	US EPA	On-Property FRI Work Plan Amendment No. 11 - TSAP for Surface Water/Groundwater Interaction Investigation near Acidic Pond and Leviathan Creek [Draft Final]	Submitted			Submitted with line-by-line RTC to 01/22/16 comments.
	01/22/16		01/22/16			On-Property	Amendment 11	US EPA	Atlantic Richfield	EPA Comments on Amendment No. 11 - TSAP for Investigation of Ponding Near Leviathan Creek, Leviathan Mine Site, Alpine County, California, dated September 20, 2015	Received			US EPA requests line-by-line response to comments and revised TSAP by 02/19/16.
	09/20/15	09/20/15				On-Property	Amendment 11	Atlantic Richfield	US EPA	On-Property FRI Work Plan Amendment No. 11 - TSAP for Investigation of Ponding Near Levaithan Creek	Submitted	Comments delivered 01/22/16		
	05/18/16		05/18/16			On-Property	Amendment 10	US EPA	Atlantic Richfield	EPA Approval of Atlantic Richfield's [sic] Company's On-Property FRI Work Plan Amendment No. 10, Revision 3 Final, dated September 30, 2015	Received			Approves the Revision 3 workplan with additional comments; Atlantic Richfield to provide an updated schedule and any final workplan modifications for the 2016 field season based the preliminary evaluation of stream sediment and floodplain soil sampling results. Indicates comments on the 04/15/16 submission will be provided under separate cover.
	12/21/15		12/21/15			On-Property	Amendment 10	US EPA	Atlantic Richfield & Others	2015/2016 El Niño Contingency Plan [Final]	Received			
	12/02/15	12/02/15				On-Property	Amendment 10	Atlantic Richfield	US EPA	Suggested edits to Final Draft El Niño Contingency Plan	Submitted			Discussed during 12/10/15 quarterly technical meeting; Greg Reller and Bob Starr discussed criteria for changes in water quality after the meeting.
	11/30/15		11/30/15			On-Property	Amendment 10	US EPA	Atlantic Richfield & Others	El Niño Contingency Plan [Final Draft]	Received			
	11/23/15	11/23/15		11/23/15		On-Property	Amendment 10	Atlantic Richfield	US EPA	Response to US EPA comments on El Niño Contingency Plan provided by email on 11/23/15	Submitted	Comments delivered via email on 11/30/15		
	11/17/15	11/17/15				On-Property	Amendment 10	Atlantic Richfield	US EPA	Comments on U.S. EPA's El Niño Contingency Plan	Submitted	Responded via email on 11/23/15		
	10/20/15					On-Property	Amendment 10	US EPA	Atlantic Richfield	EPA Comments on Field Memorandum for Phase 2 Characterization of Beaver Dam Mud, On-Property Reach of Leviathan Creek, Dated October 13, 2015	Received			Approved, directs ARC to ensure sampling completed during 2015 season.
	10/19/15					On-Property	Amendment 10	Atlantic Richfield	US EPA	Winter Monitoring Plan for Beaver Dam/Pond Complex in the On-Property Reach of Leviathan Creek	Submitted			
	10/13/15					On-Property	Amendment 10	Atlantic Richfield	US EPA	Field Memorandum for Phase 2 Characterization of Beaver Dam Mud, On-Property Reach of Leviathan Creek	Submitted			